What is claimed is:

1. An image processing apparatus for extracting contour characteristics of an image to perform dot correction, comprising:

a window array conversion means for converting a data array of an output from a M x N window extracted from image data;

a pattern collation means for collating array conversion data obtained through said window array conversion means with a group of templates each constituted by a single-directional reference pattern; and

a pattern collation control means for switching on a time-division basis a plurality of said array conversion data obtained from an output data of the collation window through said window array conversion means to collate said single-directional reference pattern group with said array conversion data.

2. The image processing apparatus according to claim 1, wherein said pattern collation control means switches to select said array conversion means according to logic combination of mark dots and space dots among the current dot of interest and its right and left neighboring dots in said output data of the window.

3. The image processing apparatus according to claim 2, wherein said pattern collation control means extracts, as the current dot of interest, a center dot from M x N dot array in

a window obtained from said image data, together with the right and left dots both neighboring the current dot of interest along with a direction of extraction which is a direction of image data collation.

4. The image processing apparatus according to claim 2, wherein said pattern collation means includes;

(a) a first template group of a continuous pattern consisting of said three dots entirely having mark, or else space;

(b) a second template group of a discontinuous mark pattern consisting of the current dot of interest having mark, excluding said template group (a); and

(c) a third template group of a discontinuous space pattern consisting of the current dot of interest having space, excluding said template group (a) in terms of combinations of three dots consisting of the current dot of interest and its right and left neighboring dots in said output data of the window.

5. The image processing apparatus according to claim 4, wherein said pattern collation controller starts collation with;

the template group corresponding to said continuous pattern when the current dot of interest and its right and left neighboring dots in said window output data entirely have mark, or else space;

the template group of discontinuous mark pattern when the current dot of interest has mark, and at least either its right or left neighboring dot has space; and

the template group of discontinuous space pattern when the

current dot of interest has space, and at least either its right or left neighboring dot has mark.

6. The image forming apparatus comprising;

an image processing unit for extracting a window pattern having M x N dots from a bitmap data expanded from an image data, collating said window pattern with a group of predetermined collation patterns, and extracting contour characteristics of said image to carry out dot correction; and

an image forming unit for forming an image corresponding to a bitmap data of the dot-corrected image,

wherein said image processing unit comprises:

a window array conversion means for converting a data array output from the M x N window extracted from said image data;

a pattern collation means for collating array conversion data obtained from said window array conversion means with a group of templates each constituted by single-directional reference pattern; and

a pattern collation control means for switching on a time-division basis a plurality of said array conversion data obtained from an output data of the collation window through said window array conversion means to collate said single-directional reference pattern group with said array conversion data for a plurality of times.

7. The image forming apparatus according to claim 6, wherein said pattern collation control means switches said array

conversion means according to logic combination of mark dots and space dots among the current dot of interest and its right and left neighboring dots.

8. The image forming apparatus according to claim 7, wherein said pattern collation means extracts a center dot from said M x N dot array in the window generated from said image data as the current dot of interest, together with the right and left dots neighboring the current dot of interest along with a direction of extraction which is a direction of image data collation.

9. The image forming apparatus according to claim 7, wherein, said pattern collation means includes;

(a) a first template group of a continuous pattern consisting of said three dots entirely having mark, or else space;

(b) a second template group of a discontinuous mark pattern consisting of the current dot of interest having mark, excluding said template group (a); and

(c) a third template group of a discontinuous space pattern consisting of the current dot of interest having space, excluding said template group (a) in terms of combinations of three dots consisting of the current dot of interest and its right and left neighboring dots in said output data of the window.

10. The image forming apparatus according to claim 9, wherein said pattern collation controller starts collation with;

the template group corresponding to said continuous pattern

when the current dot of interest and its right and left neighboring dots in said window output data entirely have mark, or else space;

the template group of discontinuous mark pattern when the current dot of interest has mark, and at least either its right or left neighboring dot has space; and

the template group of discontinuous space pattern when the current dot of interest has space, and at least either its right or left neighboring dot has mark.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Mikio KOGA**

Serial No.: **Not Yet Assigned**

Filed: **February 9, 2001**

For: **IMAGE PROCESSING APPARATUS AND IMAGE FORMING APPARATUS**

CLAIM FOR PRIORITY UNDER 35 U.S.C. 119

Director of Patents and Trademarks
Washington, D.C. 20231

February 9, 2001

Sir:

The benefit of the filing date of the following prior foreign application is hereby requested for the above-identified application, and the priority provided in 35 U.S.C. 119 is hereby claimed:

Japanese Appln. No. 2000-285917, filed September 20, 2000

In support of this claim, the requisite certified copy of said original foreign application is filed herewith.

It is requested that the file of this application be marked to indicate that the applicant has complied with the requirements of 35 U.S.C. 119 and that the Patent and Trademark Office kindly acknowledge receipt of said certified copy.

In the event that any fees are due in connection with this paper, please charge our Deposit Account No. 01-2340.

Respectfully submitted,
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